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06. AUG. 2004

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/001766

International filing date (day/month/year)  
23.02.2004

Priority date (day/month/year)  
09.04.2003

International Patent Classification (IPC) or both national classification and IPC  
H03G1/00, H03G3/30

*T: 9.2.5 not. A*

Applicant  
SONY ERICSSON MOBILE COMMUNICATIONS AB

*WV: 9.11.04 not. A*

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

*9.2.05: n.t. G. e-mail  
vom 10. Sept. 2004 (h.ha)*

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. -For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**International application No.  
PCT/EP2004/001766**10/553024****Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. II Priority**


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 1. ☒ The following document has not been furnished:

     ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

     ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

 2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**


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1. Statement

Novelty (N)	Yes: Claims	1-15
	No: Claims	
Inventive step (IS)	Yes: Claims	1-15
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

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**Re Item V.**

1. The following document is referred to in this communication:

D1 = US 5 909 643 A (01/06/1999)

2. There appears to be an inconsistency between the description, page 8, lines 11-19 and figure 7a. The figure indicates a reduction of the gain of a VGA, whereas the description mentions an increase of the VGA gain. It is understood however that the gain of the VGA is increased.

3. Claims 1 and 10 do not fulfill the requirements of Article 6 PCT for the following reason:

It is not clear from claims 1 and 10 what is meant by the expression "**set the respective operating conditions in the inverse state**". Notwithstanding the previous objection, it is understood from the description, see page 8, lines 1-19, starting from a bypass amplification mode in a PA/bypass amplifying circuit, when wanting to increase the RF output power of a transmitter containing a VGA and the PA/bypass amplifying circuit, firstly the gain of the VGA preceding the PA/bypass amplifying circuit is reduced while **keeping** (instead of switching into) the PA/bypass amplifying circuit in bypass mode. Afterwards, the PA/bypass amplifying circuit is switched from bypass mode to PA mode. The process is the reversed when the RF output power has to be decreased. Additionally, it is not clear what is exactly meant by "inverse state" of the variable gain amplifier, the amplification path and the bypass.

4. For the examination of independent claims 1 and 10 with respect to novelty and inventive step, the above-mentioned unclear items are interpreted as stated above in points 2 and 3.

5. The document **D1** (see figure 1 and column 3, lines 32-57) is regarded as being the closest prior art to the subject-matter of independent claims 1 and 10, and shows (the references in parentheses applying to this document) a power amplifier circuit for amplifying an input signal with respect to a specified RF output power, comprising:

- an input terminal for supplying the input RF signal to be amplified,
- an output terminal (18) for the RF signal with the output power specified,
- an amplification path (14, 15, 16) formed between the input terminal and the output terminal (18) having a power amplification circuit (15) for amplifying the RF signal,

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- a bypass (17) formed between the input terminal and the output terminal (18) for the RF signal to bypass the amplification path (14, 15, 16),
- a control terminal for controlling the operation of the amplification path (14, 15, 16) and the bypass (17) such, that an RF signal is either passed through the amplification path (14, 15, 16) or the bypass (17), and
- a variable gain amplifier circuit (13) for a preamplification of the input RF signal which is placed between the line from the input terminal to the amplification path (14, 15, 16) and the bypass (17).

The subject-matter of claim 1, as far as it can be understood, differs from this known power amplifier circuit in that it further comprises a delay control means as mentioned in claim 1, lines 25-30.

Therefore the subject-matter of claim 1 is new.

The problem to be solved by the present invention may be regarded as a reduction of glitches when switching from the amplification path to the bypass path or the other way round (see description, page 8, lines 1-19).

The above-mentioned problem is well-known in the art of amplifiers, however the way it is solved is not disclosed nor suggested by the available prior art, thereby additionally rendering the subject-matter of claim 1 inventive.

6. A similar reasoning can be done for the corresponding method claim 10.

7. Claims 2-9 and 11-15 are dependent on claims 1 and 10 and, as far as they can be understood, as such also meet the requirements of the PCT with respect to novelty and inventive step, on the condition that claims 1 and 10 are clarified (see also point 2 above).

8. The independent claims 1 and 10 are not properly cast in the two-part form with respect to the document D1 (Rule 6.3(b) PCT).